

AGRINATUR AT-HU

PRESERVING QUALITY OF LIFE AND THE ENVIRONMENT

Biodiversity by anthropogenic management for nature protection areas (EN)
Biodiversität durch anthropogene Nutzung für Naturschutzgebiete (AT)
Biodiverzitás a természetvédelmi területek antropogén hasznosítása révén (HU)

The cross-border project, AgriNatur AT-HU, investigates the conservation significance of biological arable land for species protection and biodiversity. The research is being conducted specifically in the Viennese area of the Danube National Park (Austria) and in the Natura 2000 protected area, Moson Plain (Hungary). Both areas lie in the lowland alluvial of the Danube, where riparian forests exist in a patchwork with bodies of water, meadows and cropland. Project-relevant research is used to determine and optimize the positive effects of organic farming on biodiversity, resilience and protected species. This includes monitoring agrobiodiversity, collecting the empirical knowledge of those responsible locally, and organic arable farming field trials.

Within the project, project partners and strategic partners, as well as experts and those ultimately responsible, collaborate to develop AgriNatur strategies, which ensure that organic arable farming makes a positive impact on conservation. Important environmental education measures in the project include the design of new local recreation areas that make the positive synergies between nature conservation and agriculture tangible. Educational measures are being implemented in the New Lobau in Vienna, and in the urban area of Mosonmagyaróvár in Hungary.

PROJECT PARTNERS: Municipal Department 49 – Forestry Office and Urban Agriculture (MA 49, Lead Partner), Bio Forschung Austria, Széchenyi István University, Faculty of Agriculture and Food Sciences

STRATEGIC PARTNERS: Mosonmagyaróvár Város Önkormányzata, Municipal Department 22 – Environmental Protection (MA 22), Neusiedler See-Seewinkel National Park, Metropolitan Area Management Vienna – Lower Austria, Szigetközi Természetvédelmi Egyesület, The Department of Rural Development Office of Lower Austrian Provincial Government, Fertő-Hanság Nemzeti Park

PROJECT DURATION: January 2019 to June 2022 (due to extension)

FINANCING: European Regional Development Fund (ERDF), Program: INTERREG V-A Austria – Hungary, S022 NATURE PROTECTION Improving the ecological stability and resilience of landscape and ecosystems

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Overview of the Project Areas in Austria and Hungary



Photo Credits: TerraMetrics, Map data 2021, Google Maps



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Austria-Hungary



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AgriNatur AT-HU

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Project Description: Hungary

SZÉCHENYI ISTVÁN UNIVERSITY (SZE)

Project Partner in Hungary

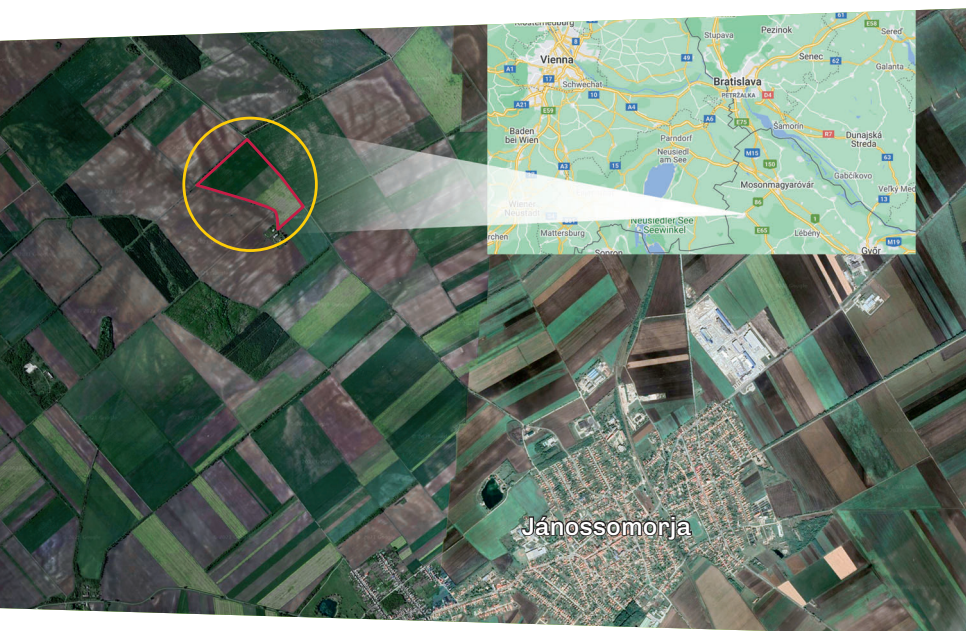
Project Activities in Hungary

In Hungary, strategy and implementation plans are being developed together with all the project partners to support and promote biodiversity in the nature reserve of Hungary's Moson Plain.

Agriculture and the cultivation of land are particularly important for the area. The project, therefore, primarily revolves around investigating methods with which to best maintain and manage the land in the protected area to promote biodiversity.



Wittmanpark



Research, Trials and the Local Implementation Plan

Together with the Austrian project partners and experts from different disciplines, the most important goals in the Hungarian area were discussed, and how these goals can be met. The project additionally investigates which animal and plant species occur in the area, which habitats exist, and the effect of land use on species and habitats. Cultivation trials with traditional and very old plant varieties are also being carried out to compare what is best for the protected area and for promoting biodiversity.

The results of these discussions, research and trials will be used to develop the Local Implementation Plan for maintaining the protected area and promoting biodiversity.

The Creation of Visitor Areas in Mosonmagyaróvár:

In addition to research and trials, two nature trails will be created in Mosonmagyaróvár, a town directly beside the protected area. These trails will explain the project, the importance of the landscape, the animals, the plants, and the ecological agriculture in the protected area.



Field test, Moson Plain

River Leitha, Wittmann Park



COMMUNICATIONS

NEWSLETTERS IN HUNGARIAN:
[HTTPS://FOOD.SZE.HU/AGRINATUR-AT-HU](https://food.sze.hu/agrinatur-at-hu)



Széchenyi István, University
Faculty of Agriculture and Food Science
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Knowledge from Experience

THE VIENNA DISTRICT FORESTERS

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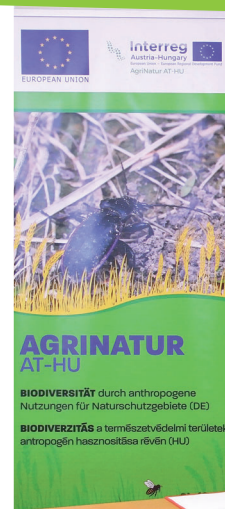
Life in Vienna's forests is truly diverse. Our task is to preserve this diversity—now more than ever.

The population of Vienna is approaching two million people. Wherever the city grows, we need new forests to host the wildlife and all the other forest dwellers. We need to have adequate protected areas, development opportunities, and zoning.

—Herbert Weidinger

Deputy Head, City of Vienna Forestry Office and Urban Agriculture

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District foresters Günter Walzer and Michael Hollinger

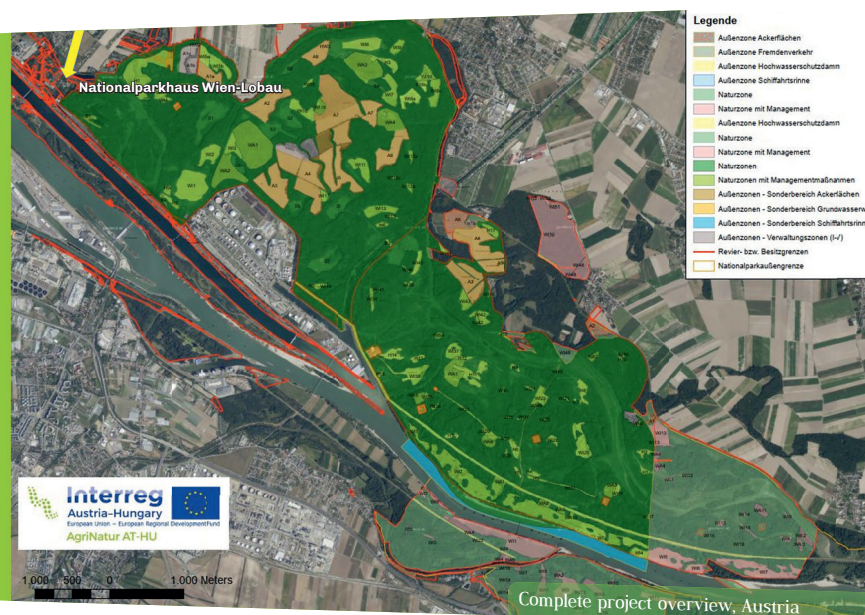
District foresters bring valuable knowledge together with decades of experience from the Viennese forests

This valuable knowledge and district-specific experience is being carefully utilized in order to facilitate the increase in proportion of nature zones to at least 75%.

More wilderness in the Lobau! In the National Park there are:

- a nature zone, from which we humans keep out; and
- a management zone, in which certain uses are possible.

The proportion of nature zones is set to grow from 57% to about 75%. To achieve this, Vienna's district foresters have carefully examined the issues that need to be taken into account. There are, for example, diseases such as ash dieback, and very dominant invasive tree species. Tree of heaven, for instance, or box elder, can spread unhindered without accompanying measures.



What happens next?

The following measures are intended to achieve the greatest possible diversity in the Danube National Park:

- Preservation and maintenance of existing picnic meadows and natural bathing areas
- Preservation and maintenance of habitats worthy of protection, such as the hot lands and meadows, e.g. regular mowing, local de-bushing
- areas currently used for forestry to be converted into natural areas
- the creation of further visitor areas
- pruning along paths
- control of invasive tree species ("neophytes") and tree diseases
- solution for arable land: either cultivation with targeted promotion of biodiversity or abandonment and conversion
- Decreasing hunting activities in large meadows near the hiking trails so that wildlife is more visible there

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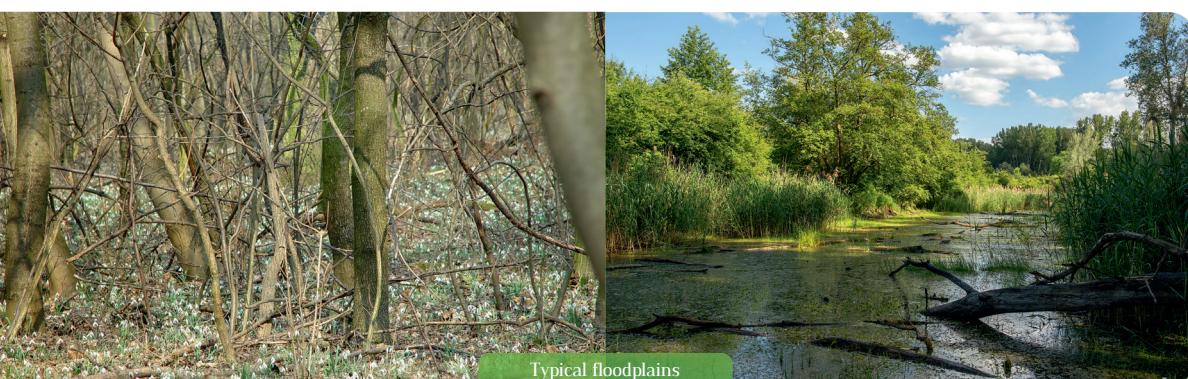
The Lobau, a green jewel embedded in a rapidly developing urban environment, is facing great challenges. Climate change, the loss of biodiversity, and the rapidly increasing demand for recreational and leisure space, etc. are focusing the public's attention on this green jewel even more than before. In this situation, the foresters, who have a strong connection and a wealth of experience in the Lobau through their daily work, have a responsible role to play.

It is they who can provide valuable contributions to make the right decisions so that this green jewel can continue to shine for generations to come.

—Alexander Faltejsek

Head of the Lobau Forestry Administration

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Typical floodplains

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Biodiversity Monitoring



Seventeen rare weed species that are on Austria's Red List have been found in the fields of the Lobau. As part of the AgriNatur project, we are investigating whether and how these species can be encouraged in the Lobau fields, because field weeds are not only competitors of cultivated plants, but also form an important basis for biodiversity in agricultural habitats.

— *Christophorus Ableidinger*
Bio Forschung Austria



Field Weed Monitoring

Since the widespread use of tractors, fertilizers and herbicides in agriculture, field weeds have become rare, but their flowers and seeds provide an important food source for many animals.

For the first time, monitoring was carried out on field weeds in the organic fields of the Lobau, where 72 distinct species were found. The cornflower (*Cyanus segetum*) and the Breckland speedwell (*Veronica praecox*) are even on Vienna's Red List!

Possible strategies for the promotion of arable weeds:

- Field strips with a reduced seed rate in fields with a low proportion of competitive root weeds
- (Rewilded) islands in fields for field birds and insects, preferably with local seeds



The goal of meadow regeneration in the conversion areas of the Lobau has largely been achieved. Species-poor areas of goldenrod have become species-rich meadow ecosystems with a remarkably high proportion of herbs. In contrast, the "untreated" goldenrod areas have remained unchanged.

— *Norbert Sauberer, V.I.N.C.A.*

Institute for Nature Conservation Research and Ecology for the Nature Conservation Association of Lower Austria



Monitoring of Meadow Regeneration Areas

This monitoring was carried out to assess the effectiveness of measures for converting neophyte fields on former arable fields into hay meadows. The conversion of neophyte-dominated land (with mainly goldenrod, *Solidago gigantea*) into meadows has been successful. Mowing twice is enough to prevent the goldenrod from coming up again. By contrast, the areas where goldenrod is still present today have remained stable and unchanged since 2011.

In 2010–2013, 45 hectares of meadows from goldenrod lands were developed in the Lobau by cultivating grain, and sowing a grass-rich, regional seed mixture from the Danube-March region to suppress the goldenrod. 10 years later, goldenrod coverage is mostly below even 1%, and the former arable species, which were still abundant in 2014, have disappeared.



Goldenrod field to be converted



Successful conversion to meadow habitats

Wild Bee Monitoring

Wild bees are important pollinators in agriculture and thus make an essential contribution to our daily diet. Due to their central role, the diversity of wild bees in the Upper Lobau area was examined in detail.

There are around 700 species of wild bees in Austria, many of which can be observed in the National Park from early spring onwards while foraging or building nests. The violet carpenter bee (*Xylocopa violacea*) is the largest wild bee species found in the area, measuring just under 3cm. The furrow bee *Lasioglossum glabriusculum* is one of the smallest bees, measuring 4–5 mm.



With 210 wild bee species, about half of the species known to Vienna occur in the study area. The high diversity of species is in large part due to the close interlinking of open and forest habitats. 80 bee species use arable land as a partial habitat, either by collecting pollen or nectar from the flowers of weeds, or by building their nests in gaps in the arable soil. It is important for wild bees that land management extensification measures are taken in the Upper Lobau.

— *Esther Ockermüller*
Office for Entomology & Conservation



Furrow bee (*Halictus polliniosus*)



Bryony mining-bee (*Andrena florea*)



Violet carpenter bee (*Xylocopa violacea*)



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Biodiversity Monitoring

Ground Beetle Monitoring

Ground beetles were studied in organic fields, fallow land, and in the field margins of the Upper Lobau.

- **Significance as beneficial insects:** Ground beetles feed largely on other animals and thus regulate pests in organic agriculture without the use of insecticides.
- **Importance as organic indicators:** Almost all species live as larvae in the soil and as beetles on the soil surface. Many are sensitive to chemical pesticides. The presence or absence of certain species, therefore, reveals much about the condition of the soil and the entire agroecosystem under the influence of cultivation.
- **Species-rich in the Lobau farmland:** So far more than 90 species have been identified, including some endangered species on the Red List, such as the ground beetle *Harpalus smaragdinus*.



As a young zoologist in the early 1980s, I researched ground beetles in fields surrounded by the biotope mosaic of the former Danube Floodplains, in what is now the National Park area of the Upper Lobau. Interesting, and sometimes rare, arable species were found in the organic fields. Several subsequent investigations in the 1990s consolidated the picture of species-rich farming, typical of an arable landscape. The end of organic farming will therefore cause a significant loss of species in the National Park.

—Bernhard Kromp

Head of Institute, Bio Forschung Austria



Scheidler's Ground beetle (*Carabus scheidleri*)



Checking the beetle traps



Ground beetle *Poecilus cupreus*

As part of the AgriNatur project, butterfly diversity was monitored in the Upper Lobau area for two years. A total of 46 butterfly species were detected, 17 of which are included on the Vienna Red List. In the surveyed areas, the meadow brown (*Maniola jurtina*) is the most common butterfly species, while the green-underside blue (*Glaucopsyche alexis*) is one of the rarest species.

—Martin Strausz

Independent Biologist on behalf of Bio Forschung Austria



Butterfly Monitoring

Butterflies need host plants as food for the caterpillars, and pollen and nectar for the adults. Many species can only live on certain plants, so they are absent from unvaried, species-poor vegetation.

They are used to check and assess the quality of agricultural habitats because they react sensitively to pesticides and over-fertilization, and they are comparatively easy to detect in the field.



Old world swallowtail (*Papilio machaon*)



Orange-tip (*Anthocharis cardamines*)

Bird Monitoring

In addition to the waterfowl and forest bird species typical of the Danube Floodplain National Park, numerous cultivated land species also breed in the area. They occur in open areas such as hot lands, meadows and fields as well as in the edge zones. Typical and particularly common representatives are the goldfinch, yellowhammer and starling. Small-scale arable land also provides a habitat for rare species such as the common quail. The agricultural areas are used for foraging, while the edge zones provide important breeding sites for cavity-nesting birds due to the high proportion of old trees. A total of 48 breeding bird species were detected in the project area in 2020. These included strictly protected species such as the red-backed shrike (*Lanius collurio*) and the European turtle dove (*Streptopelia turtur*).



European turtle dove (*Streptopelia turtur*)



Yellowhammer (*Emberiza citrinella*)



Red-backed shrike (*Lanius collurio*)

Bird surveys in the Lobau in spring 2020 and 2021 will shed light on the current situation of cultivated land species on 175 hectares of open land, and the surrounding forest edges, in the project area. While formerly typical open land species such as the corn bunting have disappeared, semi-open land species such as the common starling and yellowhammer are abundant.

The Lobau, especially in areas of dry grassland and Heilnden, is very species-rich, and the edge zones are particularly valuable! Unfortunately, the arable land itself is not an ideal breeding ground. Intensification and strips of flowers or fallow land can provide birds with a food base and undisturbed breeding sites.

—Christina Nagl

BirdLife Austria



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Project Activities

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Finding solutions together!
Therein lies huge potential! Project partners, strategic partners, experts and responsible persons are working together to answer the following questions:

- How can the use of agricultural land in the National Park be managed in the future?
- How can organic farming be further developed?

In this way, naturally managed areas should continue to enrich biodiversity!

—Susanne Leputsch

Project Manager, City of Vienna Forestry Office and Urban Agriculture



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Valued, joint efforts from across disciplines and areas of responsibility; practical knowledge and experience; scientific insights and approaches; openness, consistency and goodwill—these are the building blocks for truly future-oriented solutions. AgriNatur is leading the way.

—Alois Mätzler

Moderator for Process and Communication, >improve<



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› EXPERIMENTS WITH "OLD" PLANT SPECIES › WHAT ARE ARTIFICIAL NEST BOXES GOOD FOR? ›
DISTRICT FORESTERS: CONSTANT OBSERVERS › BIODIVERSITY MONITORING › "LEADER BEETLE"
AND LITTLE VERONICA › VIRTUAL EXPERT MEETINGS › NATURE TRAILS: ECOSYSTEMS UP CLOSE!

NEWSLETTERS SHARE THE KNOWLEDGE

The progress of the project is communicated as clearly as possible. The **CONTENTS** of the newsletters provides a concise overview of the project activities at the relevant stage.



Crested lark (*Galerida cristata*)



Sand lizard (*Lacerta agilis*)



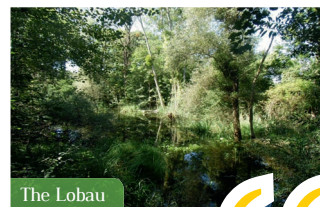
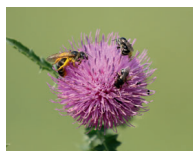
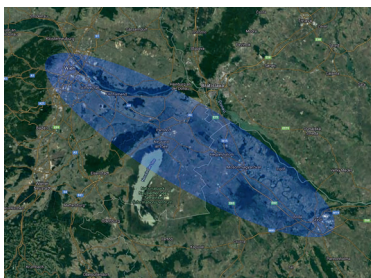
The Lobau



Banded demoiselle (*Calopteryx splendens*)



Field trials in Hungary



The Lobau

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Within the framework of the project's joint activities, the available research data on the natural environment of the program region will be combined with the results of ongoing experiments and the project's own research in the Natura 2000 areas.

The work of the Austro-Hungarian AgriNatur project is in full swing. The development of AgriNatur strategies is an important element. The recent period has shown that effective work can be done on both sides of the border even without face-to-face meetings.

—Vér András

Hungary Project Manager, Széchenyi István University



We live in an age in which industrial agriculture is causing biodiversity to disappear.

The aim of the AgriNatur AT-HU project is to identify new opportunities for sustainable agriculture that promote biodiversity. For this purpose, Bio Forschung Austria is surveying the current biodiversity of wild bees, butterflies, birds, ground beetles, and wild field herbs in the agriculturally used part of the Danube Floodplains/Lobau National Park.

—Katrin Fuchs

Project Manager Bio Forschung Austria

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Project Activities



The National Park, including the European protected area of the Danube National Park, is an especially important component of the high diversity of species and habitats in Vienna.

There is less and less water in the Lobau. Climate changes have contributed to this drying up. Plant populations are changing. A political decision is urgently needed to preserve this protected water area! Due to its size and high biodiversity, the National Park will always remain a specially protected area in Vienna.

—Marlis Schnetz

Area Protection Activities Expert,

City of Vienna Environmental Protection Department



The AgriNatur project takes into account the responsibility of the National Park for the development of ecological, environmentally sound and biodiversity-promoting arable farming. The lessons learned, and steps for implementation, are guideposts for diversity-promoting management. The positive effects on animal food chains and opportunities for local urban supply will form the basis of the allocation of the National Park's outer zone special arable land section to future habitats.

—Wolfgang Khutter

Head of Nature Conservation & Geoinformation Technology,
City of Vienna Environmental Protection Department



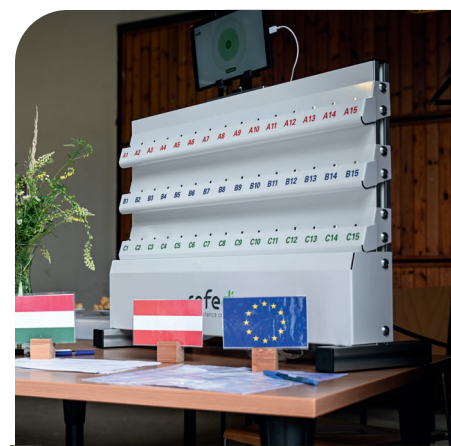
In three AgriNatur expert workshops and seven virtual meetings, dedicated participants have been working together from agriculture, forestry, nature conservation and other areas of expertise. Beginning with the Start-UP workshop in May 2019, expectations for the project, goals and research results were discussed, such as:

- How can agriculture contribute to biodiversity?
- Are the timings of cultivation and harvesting, the crops grown, or the presence of structures such as individual trees or hedgerows important?

For the Austria project area, the results of individual meetings trigger the preparation of a Local Implementation Plan for the Viennese part of the Danube Floodplain National Park. These provide an important basis for deciding whether arable farming should remain in the National Park in the long term or whether other solutions are better for nature conservation. One of the main objectives of the AgriNatur AT-HU project is to raise public awareness of the issue of biodiversity on agricultural land. New nature trails and open spaces ("Fields of Diversity", "AgriNatur Garden") will remain in place even after the project has been completed as they are sustainable educational activities.

Some of the events are held in cooperation with the Vienna-lobAU National Park House:

- AgriNatur AT-HU project research evening (November 3, 2020, online) with presentations and discussions about monitoring as well as two scenarios of the Local Implementation Plan for the Austria project area
- Special exhibition of the 2021 visitor season
- Themed walks
- Creative competition for elementary schools in the Donaustadt district: "A Bug's Life in the Field"



Images from the AgriNatur AT-HU Start-UP workshop, expert workshops and virtual meetings



The transfer of knowledge is an integral concern of the AgriNatur AT-HU project. If you want to make a difference in the long term, you have to start with the youngest children. In 2021, therefore, the topic of biodiversity will be brought closer to elementary school children in Vienna's 22nd district, within the framework of the Vienna-lobAU National Park House's school class competition.

—Kim Hissek

Bio Forschung Austria



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The Development of the Local Implementation Plan AT

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At the start of the "AgriNatur" project, it was important to us to first analyze the environmental compatibility of the organic farming operation, which had already been practiced for decades in the Vienna Lobau Floodplain conservation area. This type of arable farming was as close to nature as possible for the management zone, on around two percent of the entire national park. It involved not only a biocenotic (ecological) interdependence with strict nature zones, a lack of chemicals and the appropriate use of machinery, but also the experience of nature for more than one million(!) recreation visitors per year.

Meanwhile, the project outcomes have become increasingly important as a model for future organic agriculture, in which climate adaptation and biodiversity are factored in, and not restricted to protected zones. There is a special interest in conducting intensive ecologization and research into biodiversity here because it is a national park area—but at the same time, it has proven to be an important experimental field, and a model for sustainably and naturally conditioning agricultural lowland landscapes, transforming them into biodiverse, wildlife-friendly territory designs, where hunting is still of value in the cultivated land.

—Bernd Lötsch

Biologist, General Director Emeritus, Natural History Museum, Vienna

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SCENARIO A:

The Danube Floodplain National Park as a forest landscape with preserved meadows, either through uncontrolled, natural development or through conversion measures with accompanying maintenance for the targeted structuring of open land areas.



Military orchid (*Orchis militaris*)

SCENARIO B:

The Danube Floodplains National Park as a forest landscape with preserved meadows and biodiversity-promoting organic agriculture, by optimizing the current management:

- Diversification of field crops and crop rotations
- Intercropping, annual seeding on edge zones
- Targeted structuring of fields to protect and promote open land species



Pollard willow

The Lobau - Today and Tomorrow

What will the Lobau look like in the future? Today it is a large forest area with a variety of grand trees. Primeval forest-like oxbow lakes reveal the old Danube landscape: occasional ditches, regular water-lilies and lying logs. In between, are many meadows and dry "hot lands" where gravel banks used to be. In some areas, Vienna also comprises arable land, which has been cultivated organically for over 30 years.

In the Viennese part of the Danube Floodplain National Park there is currently just under 8% organic farmland, and in the entire national park 1.8%. What will happen to these arable areas in the Lobau? Two realistic development scenarios have emerged from the research.



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During the first decades of conservation work, the focus has been on saving remnants of the natural landscape. For this, human uses have to be pushed back so that forests and waters can continue to survive.

Today, we face a new paradigm shift in nature conservation: if we also want to preserve our diverse cultural landscapes, with their diversity of species, we need partnership-based approaches. Added to this, there are the challenges of climate adaptation, an impending food crisis in Pannonian agriculture and the impact of invasive species.

The preservation of biodiversity is closely and inextricably linked to quality of life and livelihoods. The Agrinatur AT-HU project's Vienna Local Implementation Plan is an important learning ground, helping us to recognize that agriculture—especially the leading organic farms—can no longer be the global reserve of all social interests.

For the entire Danube Floodplain National Park, 1.8 percent of arable land is only a small proportion of a large natural area. However, these areas produce healthy and valuable food for Vienna on 170 hectares—and can become a model for a vital patchwork of habitats through many new structures, and the biodiversity-promoting organic agriculture of tomorrow!

—Harald Kutzenberger

Landscape Planner

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Biodiversity

IN THE OPEN COUNTRY AND IN THE EDGE ZONES

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I see water supply as a priority for species protection in the Danube Floodplains National Park. I have observed amphibians my entire career and note that there is a significant shortage of water. I can illustrate this with a very simple example. When I used to go to the floodplain, I used to get a lot of mosquito bites, whereas now I have more bites from ticks than from mosquitos. That says it all, and I would look very hard at ensuring that more water gets back into the floodplain. The 'Heißbländen' (dry grassland on former fluvial deposits) too, of course: intelligent management is needed to ensure that they are preserved.

—Manfred Pintar

Zoologist, University of Natural Resources and Life Sciences Vienna

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Many animal and plant species in the Lobau live in the forest and in the waters. For a long time, the dynamics of the Danube River were the most important force, constantly creating new habitats for open land species, especially on the banks. The old maps show us that many animal species that live on the edge of the fields today, could have lived in the same place two hundred years ago, on a tributary bank, and found comparable structures there. The edge zones between open land and forest are crucial foundations for biodiversity, so that the small bombardier beetle with its explosive sounds survives here just as effectively as the German sandpiper beetle or the large fire butterfly.

Important questions for a Vienna Local Implementation Plan are: how could the target species of the open land in the Lobau be promoted, what is the importance of edge zones for these species, and how can new edge zones be created?

Target Species in Open Land

These target species are dependent on open land as habitats. Specific structural measures on arable and open land should be used to promote them in a targeted manner. It is already clear that the edges between different habitats are particularly important, such as the edge of a forest or a hedge along a field. But exactly which measures are suitable, and why, is now being researched further.



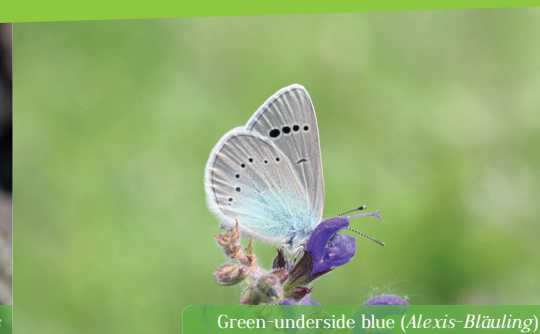
Grey partridge (*Perdix perdix*)



Red-backed shrike (*Lanius collurio*)



Ground beetle *Broscus cephalotes*



Green-underside blue (*Alexis-Bläuling*)

What significance do changes in arable farming have for edge zone habitats, and how can the target species of the Lobau's open land be promoted?

These and other questions are the subject of further research and will be addressed in the Local Implementation Plan. The current state of research already shows the importance of structural elements and edge zones for species diversity.



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The Upper Lobau represents an optimal transition zone between the National Park core zone and the urban area. Here you can move between areas with organic farming and sustainable forest management and get to know a variety of plants and animals without disturbing the peace and quiet needed for the core zone.

—Ludwig Maurer

Lecturer in Agroecology at the University of Vienna,
Chairman of the Bio Forschung Austria Association

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I am the estate manager for the Lobau Biocenter. We have been farming organically in the Lobau since 1978, so we were actually pioneers in organic farming. It has always been a goal of the farm to supply Vienna locally, which means that finding the shortest possible route to market is a fundamental issue for us. It is very important to me to maintain this local supply with healthy and healthily produced food. The City of Vienna should look to protect its farmland so that we can continue to produce food for ourselves in the future.

—Karl Mayer

Estate Manager, City of Vienna Forestry Office and Urban Agriculture

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FOR FURTHER INFORMATION, PLEASE VISIT:

[HTTPS://WWW.INTERREG-ATHU.EU/AGRINATURATHU/](https://www.interreg-athu.eu/agrinaturathu/)

CBC.WIEN/PROJEKTE/UMWELT_NACHHALTIGKEIT_ENERGIE

→ "Projekte aus der Förderperiode 2014-2020" → "AgriNatur AT-HU"



NEW RECREATIONAL AREAS

FORM THE FIELDS OF DIVERSITY

Bird Nesting Site, Insect and Bee Pasture, A Beautiful Landscape in the Course of History

As part of the AgriNatur AT-HU project, the Forestry and Agricultural Office of the City of Vienna is creating an ecological nature trail in the New Lobau. It comprises 4 rest areas, "Fields of Diversity" (R1-R4), which are connected to the existing network of paths.

Thoughtful planning, natural construction, appropriate planting, and interesting information about the biodiversity in organic fields will provide attractive, new recreational spaces for visitors, as well as suitable areas for today's endangered animal and plant species.

Completion: Fall 2021



Putting our hearts into it! The information boards have been designed for young and old alike. The dual concepts of nature education and graphic design have been combined to create a representation, not only of diverse species and their interplay with the agricultural Lobau foreland (New Lobau), but also with the conservation of nature at its heart.

—Sophie Stark
Starkes Design



Goodbye to agricultural monocultures. The focus is on biodiversity for the Lobau area. The 4 rest places have been designed to draw attention to the special nature of the area, the disappearing, threatened, typical flora and fauna of the agricultural landscape and its edge zones.

A wide range of recreational, rest and play areas are being built for people and, of course, new habitats and refuges for animals are also being created.

—Heidelinde Holzinger
HHolzinger Landscape Architecture



It is important to allow a degree of responsible use. I am, however, convinced that education is needed to ensure people use it correctly. The Lobau and its surroundings are especially popular for leisure activities, for example, cycling, hiking, children playing, picnicking, and more! I feel that such an area, such a natural resource, is incredibly important.

—Christian Ohr
District Councilor and
Environmental Committee Chairman (ret.), Donaustadt



In and around the Lobau's organic fields

01. The little **spotted flycatcher** (*Muscicapa striata*) waits on a dry branch on the bank for passing insects and catches them skillfully in flight!

02. The **caterpillar-hunter** (*Calosoma inquisitor*, on the blackthorn) is a ground beetle but it can fly well. It lives in bushes where it eats caterpillars and other larvae.

03. A large, bright **sail swallowtail butterfly** (*Iphiclides podalirius*) "sails" over the creeks and fields of the Lobau. The caterpillars are usually found on solitary sloes and hawthorn bushes at the edge of fields.

04. The small **harvest mouse** (*Mycomis minutus*), with its long tail, lives hidden in reeds, reed canary grass, or in the sedge beds of the floodplain forest. It builds its spherical nests there and climbs skillfully in the vegetation.

05. **Buff-tailed bumblebees** (*Bombus terrestris*) are powerful social bees that tolerate the cold well and pollinate up to 4,000 flowers a day! They contribute to the ripening of many fruits.

06. In winter, the **long-tailed tits** (*Aegithalos caudatus*) search for insects in small family groups at the edge of the forest and in hedgerows, while climbing through the branches.

07. A persistent cooing can be heard from the willow bush at the edge of the floodplain forest—this is how we normally find the **turtle dove** (*Streptopelia turtur*).

08. Plenty of open ground on banks, dry grassland, and field margins is a survival prerequisite for the greenish iridescent **cliff tiger beetle** (*Cylindera germanica*).

09. **Cornflower** (*Cyanus segetum*) is mainly found on the edges of cornfields, where its plentiful blue flowers shine in the sun. The high sugar content of the flower nectar makes it a popular bee pasture.

10. The towering **wild teasel** (*Dipsacus fullonum* L., with the eastern Bath white) has many prickly stems. Rainwater collects in the funnels of its stem leaves for birds or hikers to drink.

11. The **furrow bee** (*Halictus poliniosus*) looks like a very small honeybee. It collects pollen from many different flowers and digs underground cavities for its nest.

12. **Red deadnettle** (*Lamium purpureum*) thrives on nutrient-rich soil in fields and forest edges. The nectar of the long-tubed flowers is especially popular with common carder bees. Buff-tailed bumblebees bite open the side of the flowers to get at the nectar.

13. The specialized **common carder bee** (*Bombus pascuorum*) has a long proboscis, so it mainly visits mint plants such as groundsel and deadnettle. Their small colonies often live at forest edges.

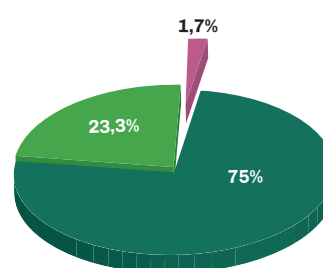
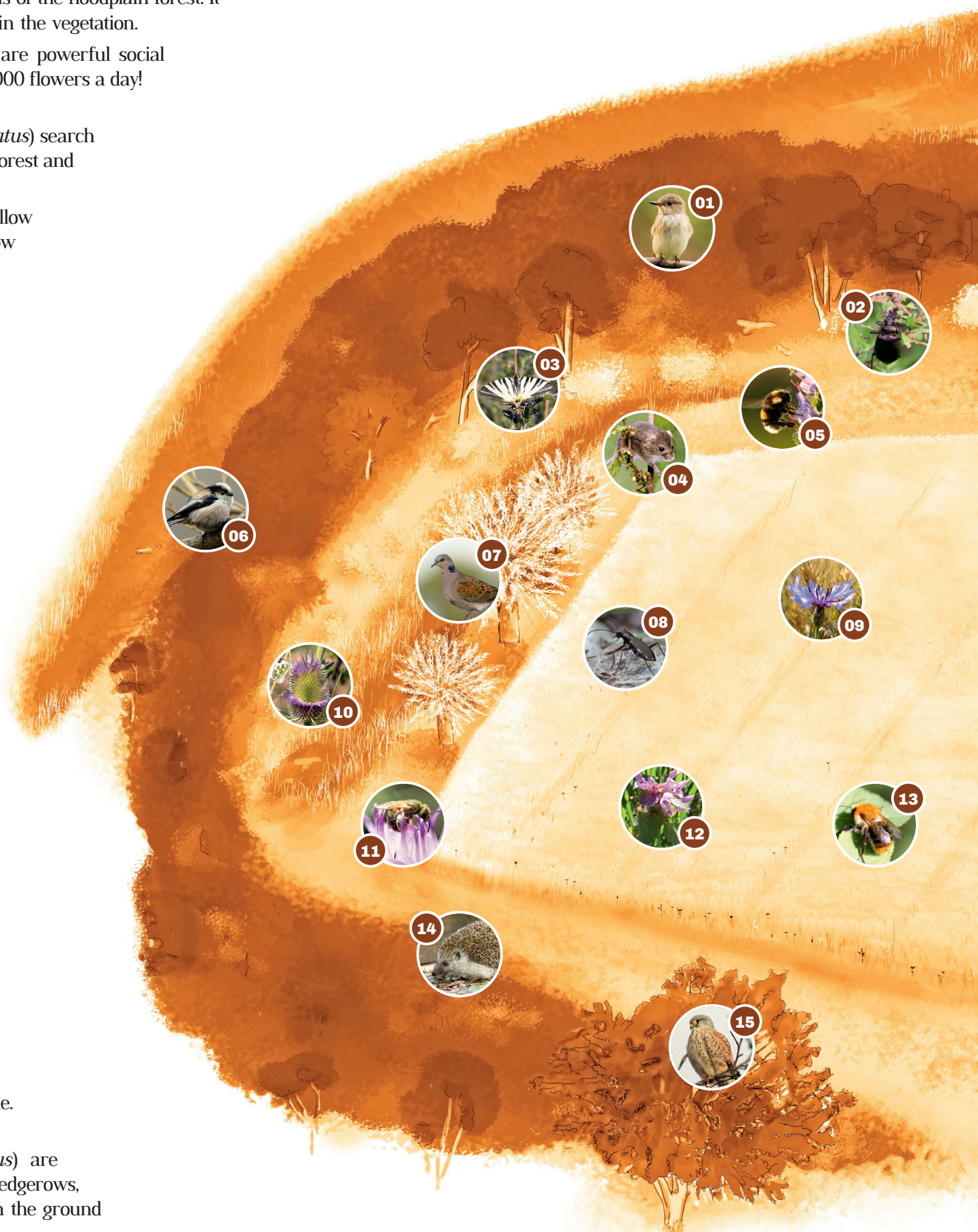
14. **European hedgehogs** (*Erinaceus europaeus*) are found in the Lobau at the edge of forests or in hedgerows, where they forage for worms, insects, and snails on the ground at night.

15. First on the **kestrel's** (*Falco tinnunculus*) menu are voles, which are usually spotted whilst in flight and are captured in a dive. To save energy, they look for prey from their perches in winter.

16. Large poplar trees are the preferred eyrie (aerial nest) trees for colonies of **gray herons** (*Ardea cinerea*). They eat mice, frogs, and small fish.

Monitoring

In addition to protecting specific habitats, national parks also serve to protect diversity and the flora and fauna. To find out how important the preservation of farmland and its surrounding areas are for biodiversity in the National Park, and to discover whether species worthy of special protection can be found there, systematic observation has been carried out since 2019 on a selection of indicator groups of animal and plant species.



Proposal for a New Zoning

according to the proposal in the Local Implementation Plan, Scenario B: "Forest landscape with preserved meadows and biodiversity-promoting organic farming":

- NATURE ZONE
- NATURE ZONE WITH MANAGEMENT, WITHOUT ARABLE LAND
- NATURE ZONE WITH MANAGEMENT / SHARE OF ORGANIC ARABLE LAND

17. The primitive **banded demoiselle** (*Calopteryx splendens*) flies like a butterfly and has a conspicuous, dark wing-band. It inhabits slow-flowing, sandy streams with loosened riparian vegetation.

18. A field border with a few wild rose bushes is rich in grasshoppers, beetles and Hymenoptera, which the skillful **red-backed shrike** (*Lanius collurio*) pursues in flight; the hawthorn bush serves as a hunting and breeding ground.

19. The **Scheidler's ground beetle's** (*Carabus scheidleri*) preferred habitats are hedges, small piles of leaves and stones, which they can hide underneath during the day.

20. The **yellowhammer** (*Emberiza citrinella*) sings high up on a treetop at the edge of the forest. Its nest is hidden on the ground among the grasses. There it forages for weed seeds in the fields.

21. Deadwood, old grass and sandy soil for laying eggs and warming up, frost-free hibernation sites, and many small insects for food—this is an ideal habitat for a **sand lizard** (*Lacerta agilis*).

22. **Bombardier beetles** (*Small B., Brachinus expulsores*) are among our smallest ground beetles. They live in sandy locations and need the pupae of other ground beetles of the genus *Amara* for their food.

23. **Grey partridges** (*Perdix perdix*) need hedges and a variety of food: herb seeds for the parents and small insects for the young. The families stay together all winter and sometimes fly up in "chains" from the edge of the field.

24. Just a few decades ago, the **European hamster** (*Cricetus cricetus*) was widespread. Today it is threatened with extinction worldwide. It has been given a new chance in the fields of the Lobau.

25. The large gray or brown **blue-winged grasshopper** (*Oedipoda caerulescens*) only truly catches your eye when it flies along the field paths and its turquoise underwings light up.

26. The **Eurasian skylark** (*Alauda arvensis*) breeds in open terrain with dry to variable soils and largely unobstructed horizons. It often mimics the sounds of its environment.

27. Gossamer-winged butterflies are typical of near-natural flowery meadows. The **green-underside blue** (*Glaucopsyche alexis*) typically has a metallic-green pattern on the gray underside of its wings.

28. **Queen of Spain fritillary** (*Issoria lathonia*) caterpillars live on violets at the edge of the forest. The butterflies, with their conspicuous white wing spots, live and fly on flower-rich margins.

29. Annual herbs such as **bugloss** (*Anchusa arvensis*) are typical in fields and they are popular with bees. They cope well with the dynamics of farming, which is often similar to that on riverbanks.



Agrobiodiversity Indicator Groups

Ground Beetles

- Rich in species and specimen in agricultural ecosystems
- Indicators of cultivation intensity
- Important for natural pest control



Field Herbs (Agricultural Weeds)

- Sharply declining distribution in the last decades due to intensification of agriculture



Birds

- Well-studied species group
- Currently in sharp decline in agricultural landscapes



Wild Bees

- Important crop pollinators
- Indicators of vegetation & structural diversity



Butterflies

- Easy to detect in the field
- Indicators for vegetation diversity



Project Description: Austria

CITY OF VIENNA FORESTRY OFFICE AND URBAN AGRICULTURE BIO FORSCHUNG AUSTRIA

Project Partners in Austria



Cliff tiger beetle
(*Cylindera germanica*)

European field pansy
(*Viola arvensis*)

Ground beetle monitoring

Project Activities in Austria

In the Vienna area of the Natura 2000 Danube Floodplains, research is being carried out on the positive effects of organic agriculture on biodiversity, resilience and protected species. In 5 bilateral expert workshops, experts on research, nature conservation, agriculture, and administration share their knowledge, basic data and monitoring results. Together, they are developing strategies for biodiversity-promoting agriculture, which will have an effect in the project area and in other lowland protected areas. Another aim of the project is to raise people's awareness of the biodiversity of arable land.

Experience, Monitoring, and the Local Implementation Plan

For an up-to-date picture of biodiversity, the species groups wild bees, butterflies, ground beetles, and wild field herbs were recorded from 2019 to 2020, and birds until 2021, on organic farmland in the Lobau. At the same time, locally responsible foresters have drawn up a proposal for converting managed forest areas into nature zones.

The aim is to achieve the IUCN (International Union for Conservation of Nature) target of a 75% natural zone in the Vienna National Park area. The results form the basis of the "Local Implementation Plan for the Viennese part of the Danube Floodplain National Park", which provides a foundation for decisions on the future development of these national park areas.



The Austrian project area in the Danube Floodplain National Park



The view from Lobauweg 1 towards Esslinger Furt in the east

New Visitor Areas in the New Lobau

An agroecological nature trail is being created through the arable land of the "New Lobau", in the foreground of the National Park. From fall 2021, four "Fields of Diversity" rest areas will invite visitors to linger and will provide information on biodiversity in organic agriculture ("Life in the Field", "Insect and Bee Pasture") and the history of the Lobau landscape ("A Beautiful Landscape in the Course of History").

Get Involved!

Themed walks make it possible to experience "biodiversity in organic farming" up close. "A Bug's Life in the Field" is the theme of a creative competition for school classes in Danube City and also a special exhibition in 2021 at the Vienna-lobAU National Park House. Online information about the activities and results from the projects in Austria and Hungary can be found in newsletters and on websites.

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